REMARKS

Status of claims

Claims 1, 7, 11, 13, 15, 16, 18, and 21-27 are pending in this case. Claims 1, 13, 21, 24, and 27 are independent.

Rejection under 112 First Paragraph

In the outstanding Office Action, the Examiner rejected claims 21-27 under 35 U.S.C. § 112 first paragraph as failing to comply with the written description requirement. The Examiner asserts that the phrase "to align the rocker shaft assembly with the pedestal" in claims 21, 24, and 27, and the phrase "to [a]but a bottom surface of a rocker arm" in claims 22 and 25 are new matter.

Claims 21, 24, and 27 have been amended to recite "to position the rocker arms." Support for this language may be found on page 6, paragraph [25] of the specification. In addition, claims 22 and 25 have been amended to recite "wherein the opposed outer side walls each include a spacing step adjacent a top of the pedestal," language found in original claim 16. In view of these amendments, Applicants submit that claims 21-27 do not contain new matter and, therefore, the rejection under § 112 first paragraph should be withdrawn.

Rejections under 102(b) and 103(a)

In the outstanding Office Action, the Examiner rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by Kronich (US Patent No. 4,856,467). The examiner also rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Valentine

(U.S. Patent No. 4,819,591) in view of Kronich. In addition, the Examiner rejected claims 3, 5, and 7 as being unpatentable over Valentine in view of Kronich and Sweetland et al. (U.S. Patent No. 5,636,600). Further, the Examiner rejected claims 9 and 11 as being unpatentable over Valentine in view of Kronich, Sweetland et al., and Brown (U.S. Patent No. 3,964,455).

Claims 3, 5, 9, and 11 have been cancelled, therefore the rejection of claim 1 under § 102(b) and the rejections of claims 3, 5, 9, and 11 under § 103(a) should be withdrawn.

The Examiner also rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Valentine, Kronich, and Caya et al. (U.S. Patent No. 5,645,025). In addition, the Examiner rejected claims 15, 16, and 27 under 35 U.S.C. § 103(a) as being unpatentable over Valentine, Kronich, Caya et al., and Sweetland et al. The Examiner also rejected claim 18 under 35 U.S.C. § 103(a) as being unpatentable over Valentine, Kronich, Caya et al., Sweetland et al., and Brown.

The Examiner rejected claims 21, 22, 24, and 25 under 35 U.S.C. § 103(a) as being unpatentable over Valentine, Sweetland et al., and Caya et al. The Examiner also rejected claims 23 and 26 under 35 U.S.C. § 103(a) as being unpatentable over Valentine, Sweetland et al., Caya et al., and Brown.

Combination of Valentine, Kronich, and Sweetland et al.

Applicants have incorporated the subject matter of claim 3 into claim 1, thus essentially presenting claim 3 in independent form. Applicant submits that this amendment does not alter the scope of the claims in a manner not yet considered because the only claims remaining dependent on claim 1 are claim 7, which previously

depended on claim 3, and claim 11, which depends on claim 7. In view of this incorporation of claim 3 into claim 1, Applicants will address the merits of amended claim 1 by way of discussing the Examiner's rejection of claim 3.

Applicants traverse the rejection of claims 3, 5, and 7 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Kronich and Sweetland et al. To establish prima facie obviousness under 35 U.S.C. § 103(a), the Examiner must show first that the prior art references teach or suggest all the claim limitations. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Second, the Examiner must show that there is some suggestion or motivation, either in the references or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references in a manner resulting in the claimed invention. In re Rouffet, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998). Third, the Examiner must show that there is a reasonable expectation of success to modify or combine. In re Dow Chem. Co., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). Moreover, "[b]oth the suggestion and the reasonable expectation of success must be found in the prior art reference, not in the Applicant's disclosure." In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

Despite the Examiner's allegation to the contrary, Valentine does not disclose all the claimed subject matter of claim 1, such as, for example, a cylinder head having, among other things, an "integrally cast rocker shaft pedestal." The pedestals in Valentine are formed as multi-piece units, having two U-shaped pieces bolted around the shaft. See Fig. 2. Thus, these pedestals are not integrally cast with the cylinder head, nor would it have been obvious to make them integrally cast, because such a

configuration would not allow disassembly of the pedestal, which, in the configuration of Valentine, is required for installation of the shaft.

Further, as acknowledged in the Office Action, Valentine fails to disclose a "top deck . . . in a same plane as the top surface of the at least one rocker shaft pedestal," as recited in claim 1. The Examiner relies on Kronich for an asserted disclosure of this structure, alleging that "it is conventional in the engine valve train art, to utilize a cylinder haead (12) (sic) having a top deck in a same plane as the top surface of a rocker shaft pedestal (88)." (Office Action, page 4) However, the Examiner has not established a prima facie case of obviousness with respect to the combination of Kronich with Valentine.

Prima facie obviousness has not been established with respect to independent claim 1 at least because the Office Action does not set forth a proper motivation to modify or combine Kronich with Valentine in a manner resulting in Applicants' claimed invention. The Examiner states that

> [i]t would have been obvious . . . to have utilized . . . the configuration of having the top deck of a cylin[d]er head in the same plane as the top surface of a rocker shaft pedestal, as taught by Kronich in the Valentine device, since the use thereof would provide a cost effective and easier assembly cylinder head.

Office Action at 4. However, this alleged motivation suggested by the examiner is not found anywhere in either Valentine or Kronich. It appears that the Examiner has attempted to use improper hindsight to provide motivation for the combination of these two references.

The Examiner has not provided sufficient motivation to combine Valentine and Kronich. Therefore, at least one of the essential criteria for establishing a prima facie

case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claim 3, based on Valentine, Kronich, and Caya et al., to the extent that the rejection may pertain to amended claim 1, should be withdrawn.

Applicants traverse the rejection of claims 3 and 7 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Kronich and Sweetland et al. As acknowledged by the Examiner, neither Valentine nor Kronich, alone or in combination, discloses a rocker shaft pedestal including, among other things, "a pair of opposed sidewalls adapted for correctly spacing adjacent rocker arms on each side of the pedestal," as recited in amended claim 1. These references also fail to disclose a rocker shaft pedestal including, among other things, "spacing steps . . . adapted for correctly spacing adjacent rocker arms on each side of the pedestal," as recited in claim 7.

The Examiner relies on Sweetland et al. as disclosing these features, alleging that Sweetland et al. discloses "sidewalls having a spacing step (See Figs. 3-6) . . . adapted for correctly spacing adjacent rocker arms on each side of the pedestal." The Examiner asserts that "[i]t would have been obvious . . . to have utilized the rocker shaft pedestal as taught by Sweetland et al. in the modified Valentine device, since the use thereof would provide a more compact and easier assembled cylinder head."

However, despite this allegation by the Examiner, Sweetland et al. does not disclose at least "a pair of opposed sidewalls adapted for correctly spacing adjacent rocker arms on each side of the pedestal," as recited in amended claim 1, or "spacing steps . . . adapted for correctly spacing adjacent rocker arms on each side of the pedestal," as recited in claim 7. In Sweetland et al. each of elements 36 and 38 serve

as some sort of pedestal, each supporting a single rocker arm. Each of elements 36 and 38 also include opposed sidewalls having a single stepped portion. However, the sidewall portions of elements 36 and 38 are not and cannot be "adapted for correctly spacing adjacent rocker arms on each side of the pedestal." as recited in claims 1 and 7.

First, each of element 36 and 38 are positioned to accommodate a single rocker arm. Positioning two rocker arms on either element 36 or 38 as suggested to be possible by the Examiner would destroy the principle of operation of the rocker shaft assembly of Valentine. According to M.P.E.P. § 2143.02, if the proposed modification or combination of the prior art would change the principle of operation of the prior art, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Thus, prima facie obviousness has not been shown with regard to this feature.

Second, positioning two rocker arms on either element 36 or 38 would not be possible because elements 36 and 38 are positioned too close to one another. For example, if element 36 were to have a rocker arm on the side away from element 38, a second rocker arm could not be placed on the side nearest element 38 because element 38 would be in the way.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claims 3, 5, and 7 based on Valentine, Kronich, and Sweetland et al., to the extent that the rejection may pertain to amended claim 1, should be withdrawn.

Further, there is no motivation or suggestion to combine the references in the manner suggested by the Examiner. The rocker arms 44 and 45 of Valentine are fixed

to the rocker shafts 23 and 24. Shaft 23 and 24 rotate, moving rocker arms 44 and 45 up and down. Shafts 23 and 24 are laterally fixed, and only rotate in bearings that fix the shafts to the pedestals 25, 26, 27, 28. Therefore, there is no need for the pedestals to have lateral surfaces with the claimed attributes. In short, Valentine does not need a mechanism to fix the rocker arms relative to the pedestals. Accordingly, one would not look to Sweetland et al., which has each rocker arm rotating on its own shaft and positioned on its own pedestal, to find support structure to be used on Valentine, which has multiple rocker arms rigidly attached to a rotating rocker shaft.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claims 3, 5, and 7, based on Valentine, Kronich, and Sweetland et al., to the extent that the rejection may pertain to amended claim 1, should be withdrawn.

Combination of Valentine, Kronich, Sweetland et al., and Brown

In addition to the arguments set forth above with respect to combining Kronich, and Sweetland et al. with Valentine, Applicants also traverse the use of Brown to modify Valentine. Accordingly, Applicants traverse the rejection of claim 11 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Kronich, Sweetland et al., and Brown. As acknowledged by the Examiner, Valentine, as modified by Kronich and Sweetland et al. fails to disclose at least a rocker shaft pedestal wherein, "each sidewall includes a second step formed beneath the spacing step," as recited in claim 11. The Examiner alleges, however, that Brown "teaches that it is conventional in the engine valve control mechanism art, to utilize a rocker shaft pedestal (44) having side walls, each side wall including a second step formed beneath a spacing step."

First, the steps of Brown are on the wrong sides of the pedestals (i.e., 90 degrees off). Note that Fig. 1 is a cross-sectional view showing an orientation wherein rocker arm 20 rotates clockwise and counterclockwise. Adjacent rocker arms would be positioned further into the page or out of the page. The steps shown on element 44 are at the left and right of element 44, as positioned on the page in this view. As such, these steps could not align adjacent rocker arms.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claim 11, based on Valentine, Kronich, Sweetland et al., and Brown should be withdrawn.

Second, there is no motivation or suggestion to combine the references as suggested by the Examiner. The Examiner offers two possible motivations for combining the references in this manner. The Examiner asserts that such a combination would provide an improved cylinder head. However, the Examiner points to no disclosure in the prior art to support this assertion. Further, the Examiner uses impermissible hindsight in suggesting that use of second steps would have been obvious "to avoid an interference with . . . rocker arm movement in an assembled [e]ngine." This is a derivative of Applicants' own rationale for second steps as set forth in paragraph [25] of the specification. This rationale appears nowhere in the prior art. Thus, the Examiner has not provided and sufficiently supported any motivation or suggestion to combine the references in such a manner.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claim 11, based on Valentine, Kronich, Sweetland et al., and Brown should be withdrawn.

Combination of Valentine, Kronich, and Caya et al.

Applicants traverse the rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Kronich and Caya et al. Despite the Examiner's allegation to the contrary, Valentine does not disclose all the claimed subject matter of claim 13, such as, for example, an internal combustion engine including a cylinder head having, among other things, an "integrally cast rocker shaft pedestal." The pedestals in Valentine are formed as multi-piece units, having two U-shaped pieces bolted around the shaft. See Fig. 2. Thus these pedestals are not integrally cast with the cylinder head, nor would it have been obvious to make them integrally cast, because such a configuration would not allow disassembly of the pedestal, which, in the configuration of Valentine, is required for installation of the shaft.

Further, as acknowledged in the Office Action, Valentine fails to disclose a "top deck . . . in a same plane as the top surface of the at least one rocker shaft pedestal," as recited in claim 13. The Examiner relies on Kronich for this limitation, alleging that "it is conventional in the engine valve train art, to utilize a cylinder haead (12) (sic) having a top deck in a same plane as the top surface of a rocker shaft pedestal (88)." However, the Examiner has not established a prima facie case of obviousness with respect to the combination of Kronich with Valentine.

In this case, prima facie obviousness has not been established with respect to independent claim 13 at least because the Office Action does not set forth a proper motivation to modify or combine Kronich with Valentine in a manner that would result in Applicants' claimed invention. The Examiner states that "[i]t would have been obvious . . . to have utilized . . . the configuration of having the top deck of a cylin[d]er

head in the same plane as the top surface of a rocker shaft pedestal, as taught by Kronich in the Valentine device, since the use thereof would provide a cost effective and easier assembly cylinder head." However, this alleged motivation suggested by the examiner is not found anywhere in either Valentine or Kronich. It appears that the Examiner has attempted to use improper hindsight to provide motivation for the combination of these two references. Thus, the Examiner has not provided sufficient motivation to combine Valentine and Kronich.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claim 13, based on Valentine, Kronich, and Caya et al. should be withdrawn.

The Examiner also acknowledges that Valentine as modified by Kronich "fails to disclose the rocker shaft including at least one flat formed on an underside of the shaft adapted for mating with a top surface of the at least one rocker shaft pedestal." The Examiner relies on Caya et al. for this feature, alleging that "[t]he patent to Caya . . . teaches that it is conventional in the engine art, to have utilized a flat mating between a rocker arm support shaft (58) and a rocker shaft pedestal (24)." Applicants respectfully disagree with this allegation for at least the following reasons. First, the only thing found in Caya et al. that performs a function anything like a rocker shaft is fulcrum 56, which is far from a shaft. Second, even if one were to consider the semi-cylindrical portion of fulcrum 56 to be some sort of shaft - a notion which Applicants dispute - the "flat formed on an underside of the shaft" as claimed in claim 13 is actually located on block 58, not on the semi-cylindrical portion. Therefore, neither Valentine nor Kronich nor Caya et al disclose an engine comprising all the claimed features of claim 13, such as, for

example, "a rocker shaft, wherein the rocker shaft includes at least one flat formed on an underside of the shaft adapted for mating with a top of the at least one rocker shaft pedestal."

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claim 13, based on Valentine, Kronich, and Caya et al. should be withdrawn.

In addition, there is no motivation to combine Caya et al. with Valentine. The Examiner alleges the following motivation for such a combination:

> It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the the (sic) flat mating between the rocker shaft pedestal and the support shaft as taught by Caya in the modified Valentine device, since the use thereof would provide a more compact and cost effective engine cylinder head to accommodate a rocker arm assembly for an engine.

Office Action at 7. There is no basis in the applied references to support such an allegation. In fact, one of ordinary skill in the art would not have found it obvious to combine Caya et al. with Valentine in this manner because the structure in Caya et al. (e.g., fulcrum 56) that performs a similar function to a rocker shaft remains stationary. In contrast, shaft 23/24 rotates, and thus, one would not have found it obvious to modify the shaft of Valentine by adding the flat of Caya et al., which is a structural element designed to *prevent* rotation. As such, the Examiner has not shown adequate motivation or suggestion to combine Caya et al. with Valentine.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claim 13, based on Valentine, Kronich, and Caya et al. should be withdrawn.

Combination of Valentine, Kronich, Caya et al., and Sweetland et al.

In addition to the arguments set forth above with respect to combining Kronich and Caya et al. with Valentine, Applicants also traverse the use of Sweetland et al. to modify Valentine. Accordingly, Applicants traverse the rejection of claims 15, 16, and 27 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Kronich and Caya et al. and further in view of Sweetland et al. As acknowledged by the Examiner, none of Valentine, Kronich or Caya et al., alone or in combination, fail to disclose a rocker shaft pedestal including, among other things, "a pair of opposed sidewalls adapted for correctly spacing adjacent rocker arms on each side of the pedestal," as recited in claim 15. These references also fail to disclose a rocker shaft pedestal including, among other things, "spacing steps . . . adapted for correctly spacing adjacent rocker arms on each side of the pedestal," as recited in claim 16. Further, these references fail to disclose "opposed outer side walls having substantially flat portions adapted to abut side surfaces of adjacent rocker arms of the rocker shaft assembly to position the rocker arms," as recited in claim 27.

The Examiner relies on Sweetland et al. as disclosing these features, alleging that Sweetland et al. discloses "sidewalls having a spacing step (See Figs. 3-6) . . . adapted for correctly spacing adjacent rocker arms on each side of the pedestal." The Examiner asserts that "[i]t would have been obvious . . . to have utilized the rocker shaft pedestal as taught by Sweetland et al. in the modified Valentine device, since the use thereof would provide a more compact and easier assembled cylinder head."

However, despite this allegation by the Examiner, Sweetland et al. does not disclose at least "a pair of opposed sidewalls adapted for correctly spacing adjacent rocker arms on each side of the pedestal," as recited in claim 15, or "spacing steps . . .

adapted for correctly spacing adjacent rocker arms on each side of the pedestal," as recited in claim 16. In Sweetland et al. each of elements 36 and 38 serve as some sort of pedestal supporting a single rocker arm. Each of elements 36 and 38 also include opposed sidewalls having a single stepped portion. However, the sidewall portions of elements 36 ands 38 are not and cannot be "adapted for correctly spacing adjacent rocker arms on each side of the pedestal." as recited in claims 15 and 16.

First, each of element 36 and 38 are positioned to accommodate a single rocker arm. Positioning two rocker arms on either element 36 or 38 as suggested to be possible by the Examiner would destroy the principle of operation of the rocker shaft assembly of Valentine. According to M.P.E.P. § 2143.02, if the proposed modification or combination of the prior art would change the principle of operation of the prior art, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Thus, prima facie obviousness has not been shown with regard to this feature.

Second, positioning two rocker arms on either element 36 or 38 would not be possible because elements 36 and 38 are positioned too close to one another. For example, if element 36 were to have a rocker arm on the side away from element 38, a second rocker arm could not be placed on the side nearest element 38 because element 38 would be in the way.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claims 15 and 16 based on Valentine, Kronich, Caya et al., and Sweetland et al. should be withdrawn.

Further, there is no motivation or suggestion to combine the references in the manner suggested by the Examiner. The rocker arms 44 and 45 of Valentine are fixed to the rocker shafts 23 and 24. Shaft 23 and 24 rotate, moving rocker arms 44 and 45 up and down. Shafts 23 and 24 are laterally fixed, and only rotate in bearings that fix the shafts to the pedestals 25, 26, 27, 28. Therefore, there is no need for the pedestals to have lateral surfaces with the claimed attributes. In short, Valentine does not need a mechanism to fix the rocker arms relative to the pedestals. Accordingly, one would not look to Sweetland et al., which has each rocker arm rotating on its own shaft and positioned on its own pedestal, to find support structure to be used on Valentine, which has multiple rocker arms rigidly attached to a rotating rocker shaft.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claims 15 and 16 based on Valentine, Kronich, Caya et al., and Sweetland et al. should be withdrawn.

Combination of Valentine, Kronich, Caya et al., Sweetland et al., and Brown

In addition to the arguments set forth above with respect to combining Kronich, Caya et al., and Sweetland et al. with Valentine, Applicants also traverse the use of Brown to modify Valentine. Accordingly, Applicants traverse the rejection of claim 18 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Kronich, Caya et al., Sweetland et al., and Brown. As acknowledged by the Examiner, Valentine, as modified by Kronich, Caya et al., and Sweetland et al. fails to disclose at least a rocker shaft pedestal including sidewalls, "each sidewall including a second step formed beneath the spacing step," as recited in claim 18. The Examiner alleges, however, that

Brown "teaches that it is conventional in the engine valve control mechanism art, to utilize a rocker shaft pedestal (44) having side walls, each side wall including a second step formed beneath a spacing step."

First, the steps of Brown are on the wrong sides of the pedestals (i.e., 90 degrees off). Note that Fig. 1 is a cross-sectional view showing an orientation wherein rocker arm 20 rotates clockwise and counterclockwise. Adjacent rocker arms would be positioned further into the page or out of the page. The steps shown on element 44 are at the left and right of element 44, as positioned on the page in this view. Therefore, these steps could not align adjacent rocker arms.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claim 18, based on Valentine, Kronich, Caya et al., Sweetland et al., and Brown should be withdrawn.

Second, there is no motivation or suggestion to combine the references as suggested by the Examiner. The Examiner offers two possible motivations for combining the references as such. The Examiner asserts that such a combination would provide an improved cylinder head. However, the Examiner points to no disclosure in the prior art to support this assertion. Further, the Examiner uses impermissible hindsight in suggesting that use of second steps would have been obvious "to avoid an interference with . . . rocker arm movement in an assembled [e]ngine." This is a derivative of applicants' own rationale for second steps as set forth in paragraph [25] of the specification. This rationale appears nowhere in the prior art.

Thus, the Examiner has not provided and sufficiently supported any motivation or suggestion to combine the references in such a manner.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claim 18, based on Valentine, Kronich, Caya et al., Sweetland et al., and Brown should be withdrawn.

Combination of Valentine, Sweetland et al., and Caya et al.

Applicants traverse the rejection of claims 21, 22, 24, and 25 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Sweetland et al. and Caya et al. As acknowledged in the Office Action, Valentine fails to disclose at least one rocker shaft pedestal including "opposed outer side walls having substantially flat portions adapted to abut side surfaces of adjacent rocker arms of the rocker shaft assembly to position the rocker arms," as recited in claims 21 and 24. The Examiner also acknowledged that Valentine fails to disclose "opposed outer side walls each include[ing] a spacing step adjacent a top of the pedestal," as recited in claims 22 and 25. However, the Examiner has not established a prima facie case of obviousness with respect to the combination of Sweetland et al. or Caya et al. with Valentine.

Applicants traverse the rejection of claims 21, 22, 24, and 25 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Sweetland et al. and Caya et al. The Examiner alleges that Sweetland et al. discloses "opposed outer side walls, [each] side wall having a spacing step . . . (See Figs. 3-6) . . . to properly align the rocker shaft assembly with the pedestal." Office Action at 9. The Examiner asserts that

> "[i]t would have been obvious . . . to have utilized the rocker shaft pedestal as taught by Sweetland in the modified Valentine device, since the use thereof would provide a more compact and easier assembled cylinder head."

However, despite this allegation by the Examiner, Sweetland et al. does not disclose at least "opposed outer side walls having substantially flat portions adapted to abut side surfaces of adjacent rocker arms of the rocker shaft assembly to position the rocker arms," as recited in claims 21 and 24 or "opposed outer side walls each includ[ing] a spacing step adjacent a top of the pedestal," as recited in claims 22 and 25. Each of elements 36 and 38, in Sweetland et al. serve as some sort of pedestal supporting a single rocker arm. Each of elements 36 and 38 also include opposed sidewalls having a single stepped portion. However, the sidewall portions of elements 36 ands 38 are not and cannot be "adapted to abut side surfaces of adjacent rocker arms of the rocker shaft assembly to position the rocker arms," as recited in claims 21 and 24. First, each of element 36 and 38 are positioned to accommodate a single rocker arm. Positioning two rocker arms on either element 36 or 38, as suggested by the Examiner, would destroy the principle of operation of the rocker shaft assembly of Sweetland et al. According to M.P.E.P. § 2143.02, if the proposed modification or combination of the prior art would change the principle of operation of the prior art, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Thus, prima facie obviousness has not been shown with regard to this feature. Second, positioning two rocker arms on either element 36 or 38 would not be possible because elements 36 and 38 are positioned too close to one another. For example, if element 36 were to have a rocker arm on the side away from element 38, a second

rocker arm could not be placed on the side nearest element 38 because element 38 would be in the way.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claims 21, 22, 24, and 25 based on Valentine, Sweetland et al., and Caya et al. should be withdrawn.

Further, there is no motivation or suggestion to combine the references in the manner suggested by the Examiner. The rocker arms 44 and 45 of Valentine are fixed to the rocker shafts 23 and 24. Shaft 23 and 24 rotate, moving rocker arms 44 and 45 up and down. Shafts 23 and 24 are laterally fixed, and only rotate in bearings that fix the shafts to the pedestals 25, 26, 27, 28. Therefore, there is no need for the pedestals to have lateral surfaces with the claimed attributes. In short, Valentine does not need a mechanism to fix the rocker arms relative to the pedestals. Accordingly, one would not look to Sweetland et al., which has each rocker arm rotating on its own shaft and positioned on its own pedestal, to find support structure to be used on Valentine, which has multiple rocker arms rigidly attached to a rotating rocker shaft.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claims 21, 22, 24, and 25 based on Valentine, Sweetland et al., and Caya et al. should be withdrawn.

Combination of Valentine, Sweetland et al., Caya et al., and Brown

In addition to the arguments set forth above with respect to combining Caya et al. and Sweetland et al. with Valentine, Applicants also traverse the use of Brown to modify

Valentine. Accordingly, Applicants traverse the rejection of claims 23 and 26 under 35 U.S.C. 103(a) as being unpatentable over Valentine in view of Caya et al., Sweetland et al., and Brown. As acknowledged by the Examiner, Valentine, as modified by Caya et al. and Sweetland et al. fails to disclose at least a rocker shaft pedestal including, "opposed outer side walls each include a second step formed beneath the spacing step," as recited in claims 23 and 26. The Examiner alleges, however, that Brown "teaches that it is conventional in the engine valve control mechanism art, to utilize a rocker shaft pedestal (44) having side walls, each side wall including a lower step . . . formed below the spacing step."

First, the steps of Brown are on the wrong sides of the pedestals (i.e., 90 degrees off). Note that Fig. 1 is a cross-sectional view showing an orientation wherein rocker arm 20 rotates clockwise and counterclockwise. Adjacent rocker arms would be positioned further into the page or out of the page. The steps shown on element 44 are at the left and right of element 44, as positioned on the page in this view. Therefore, these steps could not align adjacent rocker arms.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claims 23 and 26 based on Valentine, Sweetland et al., Caya et al., and Brown should be withdrawn.

Second, there is no motivation or suggestion to combine the references as suggested by the Examiner. The Examiner offers two possible motivations for combining the references as such. The Examiner suggests, but points to no disclosure in the prior art to support the notion that such a combination would provide an improved

cylinder head. Further, the Examiner uses impermissible hindsight in suggesting that use of second steps would have been obvious "to avoid an interference with . . . rocker arm movement in an assembled [e]ngine." This is a derivative of applicants' own rationale for second steps as set forth in paragraph [25] of the specification. This rationale appears nowhere in the prior art. Thus, the Examiner has not provided and sufficiently supported any motivation or suggestion to combine the references in such a manner.

Therefore, at least one of the essential criteria for establishing a prima facie case of obviousness is lacking. For at least this reason, the § 103(a) rejection of claims 23 and 26 based on Valentine, Sweetland et al., Caya et al., and Brown should be withdrawn.

Conclusion

In view of the above, applicant submits that each of independent claims 1, 13, 21, 24, and 27 are allowable. Further, each of claims 7, 11, 15, 16, 18, 22, 23, 25, and 26 depend from one of independent claims 1, 13, 21, 24, and 27, respectively, and therefore are allowable for at least the same reasons those claims are allowable.

Applicant respectfully requests that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1, 7, 11, 13, 15, 16, 18, and 21-27 in condition for allowance. Applicant(s) submit(s) that the proposed amendments of claims 1, 7, 13 and 21-27 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.

Furthermore, Applicants respectfully point out that the final action by the Examiner presented some new arguments as to the application of the art against Applicant's invention. It is respectfully submitted that the entering of the Amendment would allow the Applicants to reply to the final rejections and place the application in condition for allowance.

Finally, Applicants submit that the entry of the amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON,
FARABOW, GARRETT & DUNNER, L.L.P.

Dated: November 22, 2005

By: _____
Jeremy T. Thissell
Reg. No. 56,065